

## ABSTRACT OF THE DISCLOSURE

A linearity compensation circuit provides cancellation of harmonic distortion introduced by a non-linear system into an input signal by providing a separate harmonic correction component for each harmonic of a fundamental frequency of the input signal. The harmonic correction components are summed with a delayed version of the input signal to produce a corrected input signal for input to the non-linear system. The separate harmonic correction components are generated by respective harmonic correction units, each having a programmable input filter, a Hilbert Transformer filter and a plurality of phase shifters. The output of each programmable input filter is input to the Hilbert Transformer filter and a compensating delay. The output from the Hilbert Transformer filter and the delayed version of the filtered input signal from the compensating delay are input to parallel phase shifters, and the respective outputs from the phase shifters are multiplied together to produce the separate harmonic correction component for each harmonic correction unit.